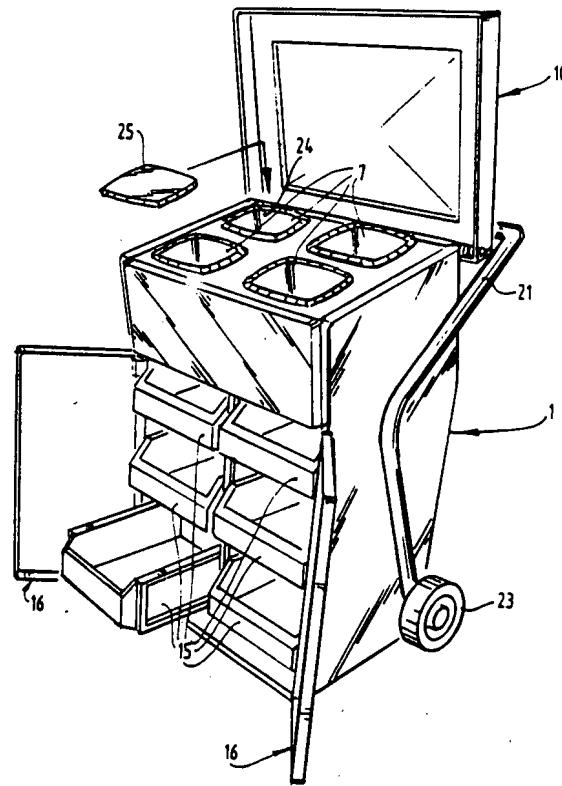


## INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 5 :  B65F 1/08		A1	(11) International Publication Number: <b>WO 91/05720</b>  (43) International Publication Date: 2 May 1991 (02.05.91)
<p>(21) International Application Number: PCT/NL90/00160</p> <p>(22) International Filing Date: 23 October 1990 (23.10.90)</p> <p>(30) Priority data: 8902623 23 October 1989 (23.10.89) NL</p> <p>(71)(72) Applicant and Inventor: VAN ROY, Hendricus, Antonius [NL/NL]; No. 84, Hemel, NL-5721 HJ Asten (NL).</p> <p>(74) Agents: HOIJTINK, Reinoud et al.; Arnold &amp; Siedsma, Octrooibureau, No.1, Sweelinckplein, NL-2517 GK The Hague (NL).</p> <p>(81) Designated States: AT (European patent), BE (European patent), CA, CH (European patent), DE (European patent), DK (European patent), ES (European patent), FR (European patent), GB (European patent), GR (European patent), IT (European patent), LU (European patent), NL (European patent), SE (European patent), US.</p>			

**(54) Title:** DEVICE AND METHOD FOR STORING AND TRANSPORTING WASTE PRODUCTS**(57) Abstract**

A device for storing and transporting waste products comprises a primary holder (1), which is open on at least one side, and closable by closing means (10, 16), and which has separate compartments accessible from the open side and rotatable transport means (23). The compartments are formed by secondary holders (7, 15) which are removably arranged in the primary holder (1). One (24) of the secondary holders (7) is provided with a separate, child-proof closing member (25). The device is used in particular for storing and transporting household refuse which has been sorted according to type, and is deposited in the separate compartments. Chemical waste products are stored separately in the child-proof compartment (24).



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**DEVICE AND METHOD FOR STORING AND TRANSPORTING WASTE PRODUCTS**

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The invention relates to a device for storing and transporting waste products, in particular household refuse, comprising a primary holder which is open on at least one side and closable by closing means and which has at least 5 two separate compartments accessible from the open side and rotatable transport means arranged close to its underside. Such a device is known from the German patent specification 35.31.554.

The increasing concern for the environment has recently 10 resulted in intensified interest for the manner in which the continually growing waste product flows are processed. One of the most important components of the waste flows is household refuse. At the present time most households collect all the household refuse in one common holder, for 15 instance a refuse bag or bin, which is then processed by a sanitation department. This method of collecting or processing household refuse entails great drawbacks and is to a large degree environmentally unfriendly.

Household refuse comprises a great number of different 20 components, each of which requires a different treatment. Household refuse can generally be divided into waste products which are environmentally harmful, waste products which are not environmentally harmful and substances which can be recycled. The drawback of tendering all these waste 25 products together for processing is that those materials which are recyclable are lost, which results in an unnecessarily high consumption of (scarce) raw materials. At the same time, because of the combined collection and processing, harmful waste products are released into the environment. 30

These drawbacks are for the most part obviated by the device known from the stated patent specification as according to the preamble of claim 1. Such a device offers namely the possibility of collecting waste products sorted according to type in separate compartments of the primary holder, and of offering the thus separated waste products to a sanitation department for processing.

The known device has several important drawbacks, however. In the first place the device can only be emptied into a special collection vehicle, in which placing of the unloading device relative to separate vehicle compartments must be adapted to the construction and dimensions of the device. In addition, the separate compartments of the known device are particularly difficult to clean, which is a disadvantage from a public health point of view.

The invention therefore has for its object to provide a device as described in the preamble of claim 1, wherein the above mentioned drawbacks are obviated. This is achieved according to the invention in that the compartments are separate secondary holders arranged removably in the primary holder.

The open side is preferably the top side, whereby the device can easily be filled and emptied.

In a possible embodiment of the invention, the primary holder has a bend about half way down and the open side is oriented at least substantially transversely of the upper part. This improves the accessibility and stability of the device.

The primary holder can be open on a standing side, and at least one of the secondary holders can be mounted slidably in lying guide means. Thus provided are compartments which are simple to fill and unload.

In yet another embodiment of the invention at least one of the secondary holders is provided with a separate, child-proof closing member.

The invention further relates to a method for storing and transporting waste products, in particular household refuse,

comprising sorting the waste products according to type and depositing the sorted waste products into separate compartments of a device according to the invention. Chemical waste products are preferably deposited into a closable compartment of the device.

Mentioned and other features of the invention are further elucidated hereinafter with reference to the annexed drawing, in which corresponding reference numerals designate corresponding components and wherein:

10 fig. 1. shows a dismantled view of a first embodiment of the device according to the invention;

fig. 2. shows a view of this embodiment when assembled;

fig. 3. is a view of a second embodiment of the device according to the invention; and

15 fig. 4. is another view of this embodiment.

A primary holder 1 comprises a standing frame 2 and plates 3, 4, 5 fixed thereto (fig. 1). On the top side the frame 2 has openings 6, which give access to separate compartments of the holder 1. The compartments are formed by 20 secondary holders 7 arranged removably in the openings 6. The secondary holders 7 comprise standing dividing means 8 and lying dividing means 9.

The primary holder 1 is provided on the top side with first closing means 10 consisting of a covering plate 11, 25 which is provided with a hand-grip 12 and edges 20 gripping round the holder 1 and which is mounted swivellably about a lying axis in bearing means 13 fixed on the plate 5.

The primary holder 1 has a bend about halfway and the upper part of the frame 2 and the secondary holders 7 arranged 30 therein are oriented transversely of the upper part of the first holder 1. Below the bend the frame 2 has lying guide means 14, in which secondary holders 15 are mounted slidably. The primary holder 1 is provided underneath the bend and adjoining the plate 4 with second closing means 16 35 consisting of two doors 17 provided with hand-grips 18 and mounted swivellably about a standing axis in bearing means 19 fixed on the plates 3.

The device displays a first gripping member 21 fixed directly on the upper and lower part of the frame 2, which member is provided on the underside with lying shafts 22 on which transport means 23 are rotatably mounted. The transport loads on the device are thus admitted directly into the frame 2.

When domestic refuse is stored and transported in the household with the method according to the invention, the user sorts the waste products according to type, whereafter 10 the first and second closing means 10, 16 of the primary holder 1 are opened and the secondary holders 15 for use are pulled outward over the guide means 14 (fig. 2). The secondary holders 7, 15 are filled with the correct waste products, wherein an information carrier, for instance instructions 15 for use, arranged on the inside of the closing means 10, 16, makes it clear to the user in which of the secondary holders 7, 15 the waste products should be deposited. Harmful waste products, so called small chemical waste, are deposited in a holder 24 arranged as high as possible in the 20 device and provided with a separate, child-proof closing member 25.

After use the closing means 10, 16 are closed and the device can be transported by being tilted by means of the gripping member 21 so far backward that the front part of 25 the device leaves the ground and the device can be moved by rolling, using the transport means 23.

When the transport means 23 are mounted about a single lying shaft 22', which is arranged between flanges 26 fixed on the plate 5 (fig. 3), a device is obtained with a minimal 30 total width. In this embodiment of the device, the hand-grip necessary for handling the device is formed by a second gripping member 27 lying in the main plane of the upper part of the frame 2.

When it is not being transported, the device stands on a 35 number of elongate supporting bodies 28 arranged on the underside of the frame 2 (fig. 4) which are formed such that the device can stand stably thereon and can still be tilted

without undue exertion when it has to be transported.

The embodiments of the device shown in the drawing have the following advantages:

5 - through the use of separate compartments it is possible to collect waste products sorted according to type whereby recycling is encouraged and the release of harmful waste products into the environment is prevented;

10 - because the compartments are embodied as removable secondary holders, the device is simple to empty and to clean;

15 - because the primary holder displays a bend and the upper part thereof faces forward, the centre of gravity in the rest position is practically straight above the supporting bodies, which helps stability, and in the tilted transporting position it is practically straight above the transport means whereby the device is simple to transport;

20 - because the holder for harmful waste products is placed as high as possible in the device and provided with a child-proof closing member, it is virtually impossible for children to come into contact with harmful waste products.

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**CLAIMS**

1. Device for storing and transporting waste products, in particular household refuse, comprising a primary holder which is open on at least one side and closable by closing means and which has at least two separate compartments

5 accessible from the open side and rotatable transport means arranged close to its underside, characterized in that the compartments are separate secondary holders (7, 15) arranged removably in the primary holder (1).

2. Device as claimed in claim 1, characterized in that  
10 the open side is the top side.

3. Device as claimed in claim 2, characterized in that the primary holder (1) has a bend about halfway down and the open side is oriented at least substantially transversely of the upper part.

15 4. Device as claimed in any of the foregoing claims, characterized in that the primary holder (1) is open on a standing side and at least one (15) of the secondary holders (7, 15) is mounted slidably in lying guide means (14).

5. Device as claimed in any of the foregoing claims,  
20 characterized in that at least one of the secondary holders (7, 15) is provided with a separate, child-proof closing member (25).

6. Method for storing and transporting waste products, in particular household refuse, comprising sorting the waste  
25 products according to type and depositing the sorted waste products into separate compartments of a device as claimed in any of the foregoing claims.

7. Method as claimed in claim 6, characterized in that chemical waste products are deposited in a closable compartment (24) of a device as claimed in claim 5.

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## INTERNATIONAL SEARCH REPORT

International Application

PCT/NL 90/00160

## I. CLASSIFICATION OF SUBJECT MATTER (if several classification symbols apply, indicate all) \*

According to International Patent Classification (IPC) or to both National Classification and IPC

IPC<sup>5</sup>: B 65 F 1/08

## II. FIELDS SEARCHED

Minimum Documentation Searched <sup>7</sup>

Classification System	Classification Symbols
IPC <sup>5</sup>	B 65 F
Documentation Searched other than Minimum Documentation to the Extent that such Documents are Included in the Fields Searched <sup>8</sup>	

## III. DOCUMENTS CONSIDERED TO BE RELEVANT\*

Category <sup>9</sup>	Citation of Document, <sup>11</sup> with indication, where appropriate, of the relevant passages <sup>12</sup>	Relevant to Claim No. <sup>13</sup>
X	DE, A, 3531554 (WURTZ) 5 March 1987 see figures 1-4; claims	6
A	(cited in the application) --	1
X	DE, U, 8714214 (SANDOZ AG) 4 February 1988 see figures 1,2; claims 1,2,4,5	6
A	--	1
A	DE, U, 8531751 (KESSEBOHMER) 22 May 1986 --	..

\* Special categories of cited documents: <sup>10</sup>

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## IV. CERTIFICATION

Date of the Actual Completion of the International Search  
14th January 1991

Date of Mailing of this International Search Report

01.02.91

International Searching Authority

EUROPEAN PATENT OFFICE

Signature of Authorized Officer


  
Natalie Weinberg

## III. DOCUMENTS CONSIDERED TO BE RELEVANT (CONTINUED FROM THE SECOND SHEET)

Category	Citation of Document, with indication, where appropriate, of the relevant passages	Relevant to Claim No
P,X	US, A, 4878592 (LEE) 7 November 1989 see figure 1; claims 1,15	1,2,6

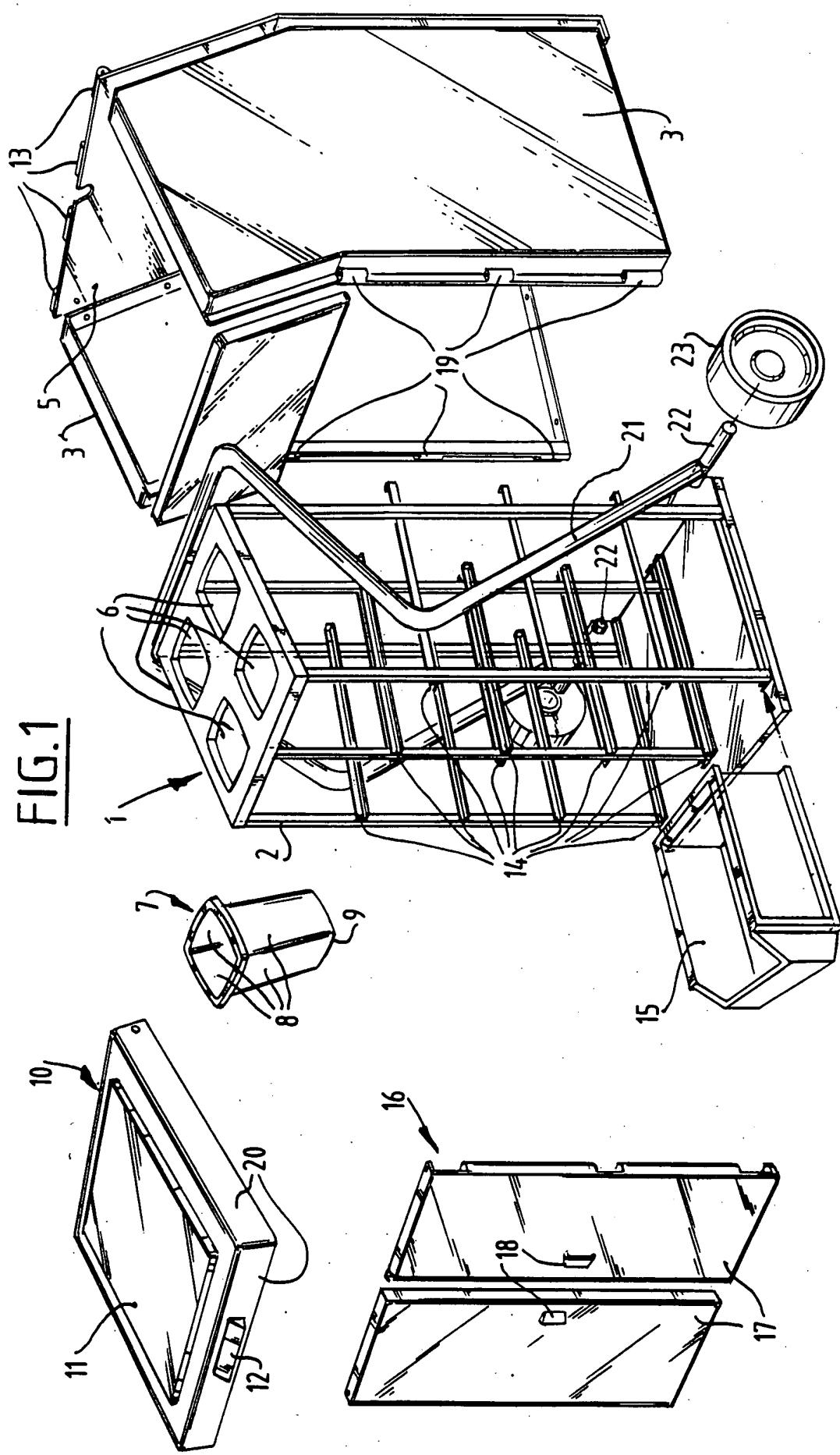
ANNEX TO THE INTERNATIONAL SEARCH REPORT  
ON INTERNATIONAL PATENT APPLICATION NO.

NL 9000160  
SA 41290

This annex lists the patent family members relating to the patent documents cited in the above-mentioned international search report. The members are as contained in the European Patent Office EDP file on 25/01/91. The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

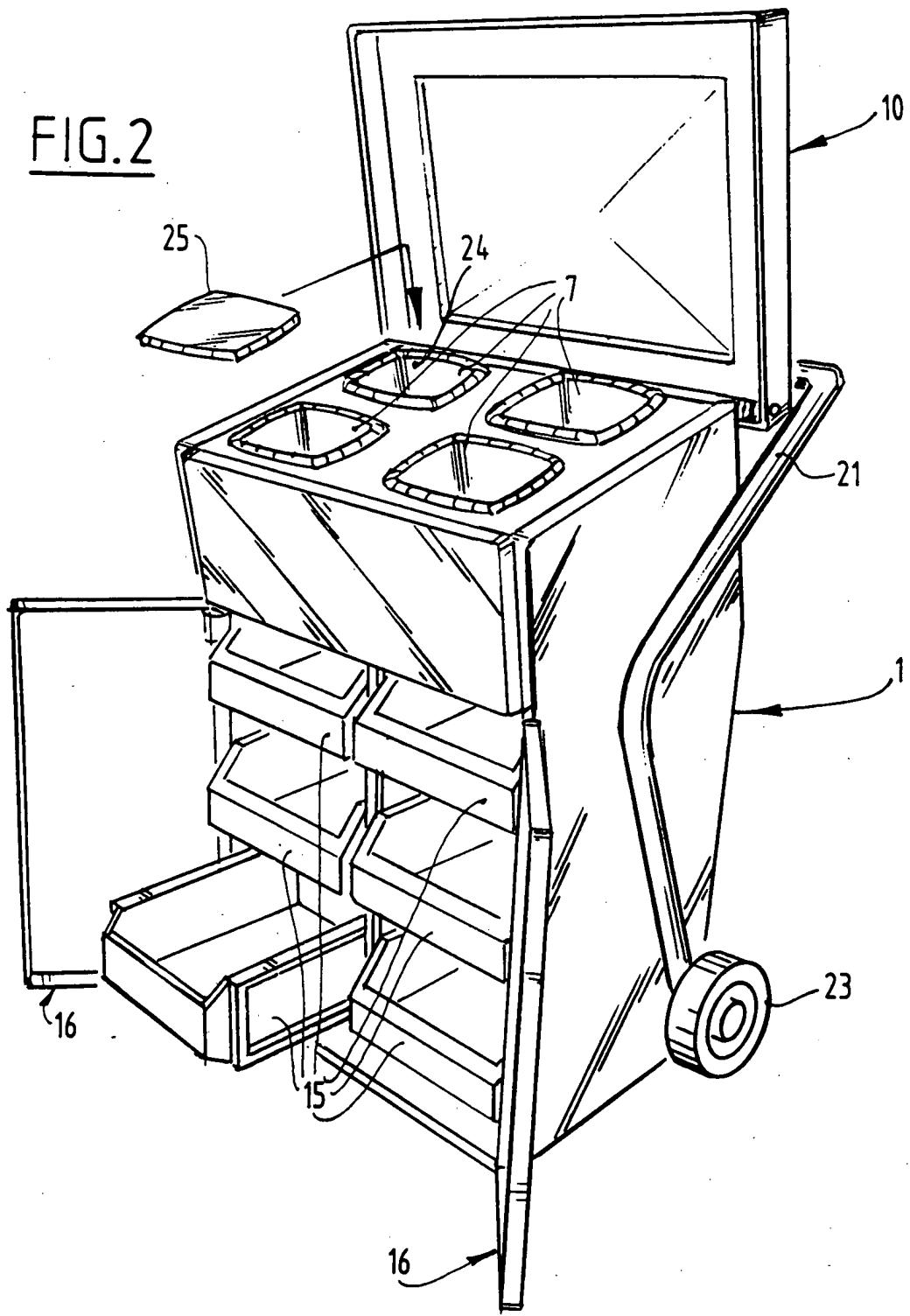
Patent document cited in search report	Publication date	Patent family member(s)	Publication date
DE-A- 3531554	05-03-87	None	
DE-U- 8714214	17-12-87	None	
DE-U- 8531751	10-04-86	None	
US-A- 4878592	07-11-89	None	

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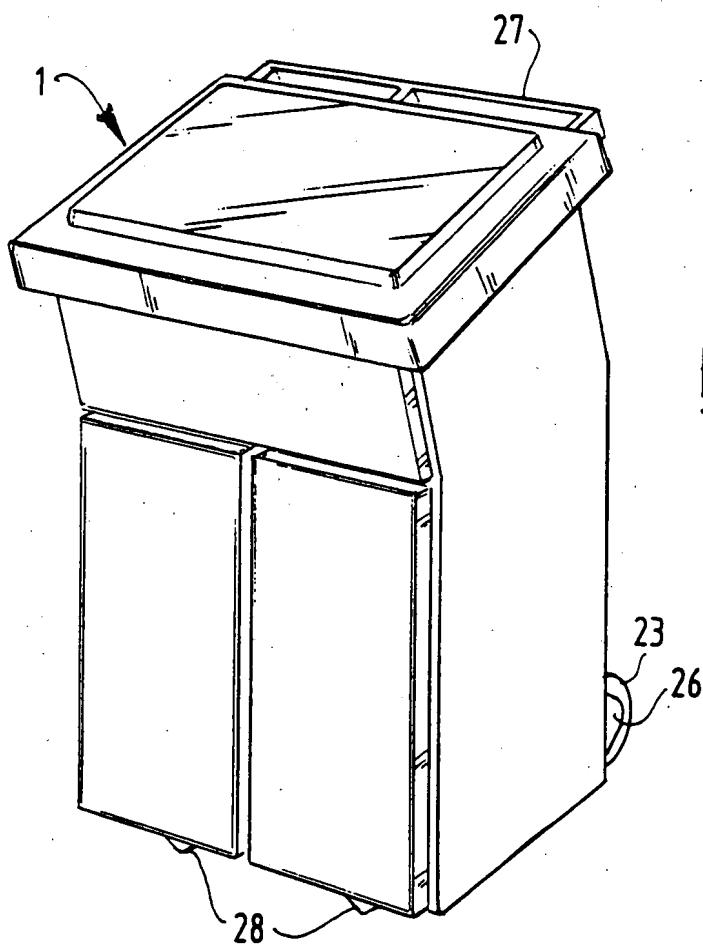
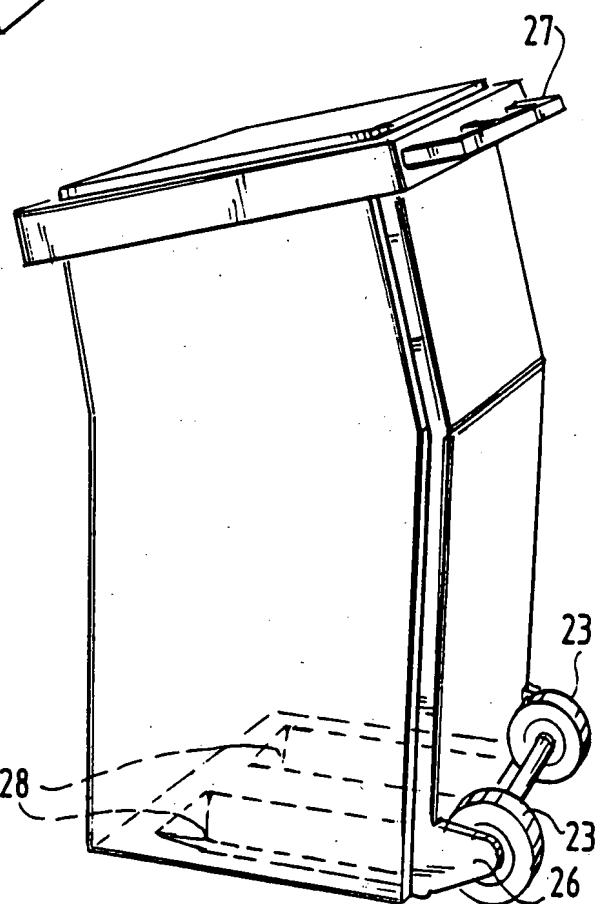


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FIG.2



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FIG. 3FIG. 4